Complete Summary

GUIDELINE TITLE

Strategies to prevent surgical site infections in acute care hospitals.

BIBLIOGRAPHIC SOURCE(S)

Anderson DJ, Kaye KS, Classen D, Arias KM, Podgorny K, Burstin H, Calfee DP, Coffin SE, Dubberke ER, Fraser V, Gerding DN, Griffin FA, Gross P, Klompas M, Lo E, Marschall J, Mermel LA, Nicolle L, Pegues DA, Perl TM, Saint S, Salgado CD, Weinstein RA, Wise R, Yokoe DS. Strategies to prevent surgical site infections in acute care hospitals. Infect Control Hosp Epidemiol 2008 Oct;29 Suppl 1:S51-61. PubMed

GUIDELINE STATUS

This is the current release of the guideline.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse (NGC): This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- July 08, 2008 - Fluoroquinolones (ciprofloxacin, norfloxacin, ofloxacin, levofloxacin, moxifloxacin, gemifloxacin): A BOXED WARNING and Medication Guide are to be added to the prescribing information to strengthen existing warnings about the increased risk of developing tendinitis and tendon rupture in patients taking fluoroquinolones for systemic use.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Surgical site infection (SSI)

GUIDELINE CATEGORY

Management
Prevention
Risk Assessment

CLINICAL SPECIALTY

Critical Care
Infectious Diseases
Internal Medicine
Nursing
Preventive Medicine
Surgery

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Hospitals
Nurses
Physician Assistants
Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

To highlight practical recommendations in a concise format designed to assist acute care hospitals in implementing and prioritizing their surgical site infection (SSI) prevention efforts

TARGET POPULATION

Patients in acute care hospitals undergoing surgery

INTERVENTIONS AND PRACTICES CONSIDERED

1. Basic practices for prevention and monitoring of surgical site infection (SSI) including:
    - Surveillance of SSI
    - Antimicrobial prophylaxis
    - Healthcare personnel and patient education about SSI prevention
    - Assignment of accountability

2. Special approaches for prevention of SSI in hospitals with unacceptably high SSI rates including
    - SSI risk assessment
    - Expanding SSI surveillance to include additional procedures

The following approaches should not be considered a routine part of SSI prevention:

- Routine use of vancomycin for antimicrobial prophylaxis
- Delaying surgery to provide parenteral nutrition

MAJOR OUTCOMES CONSIDERED

- Surgical site infection (SSI) rate
- Length of postoperative hospitalization
- Mortality
- Cost
- Sensitivity and specificity of SSI surveillance methods

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

For this compendium, the Society for Healthcare Epidemiology of America/Infectious Diseases Society of America (SHEA/IDSA) reviewed previously published guidelines and recommendations relevant to each section and performed computerized literature searches using PubMed. Searches of the English-language literature focused on human studies published after existing guidelines through 2007, using the subject headings listed in Table 2 of the Compendium document (see "Availability of Companion Documents" field).

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Quality of Evidence*

I. Evidence from $\geq$1 properly randomized, controlled trial
II. Evidence from $\geq$1 well-designed clinical trial without randomization, from cohort or case-controlled analytic studies (preferably from >1 center), from

multiple time-series studies, or from dramatic results of uncontrolled experiments

III. Evidence from opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees

*Adapted from the Canadian Task Force on the Periodic Health Examination.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

In evaluating the evidence regarding the prevention and monitoring of healthcare-associated infections (HAIs), the HAI Allied Task Force followed a process used in the development of other Infectious Diseases Society of America (IDSA) guidelines, including a systematic weighting of the quality of the evidence and the grade of recommendation (see the "Rating Scheme for the Strength of the Evidence" and "Rating Scheme for the Strength of the Recommendations" fields).

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA) Standards and Practice Guidelines Committee convened experts in the prevention and monitoring of healthcare-associated infections (HAIs).

The HAI Allied Task Force met on 17 occasions via teleconference to complete the compendium. The purpose of the teleconferences was to discuss the questions to be addressed, make writing assignments, and discuss recommendations. All members of the HAI Allied Task Force participated in the preparation and review of the draft documents. The compendium was then submitted to a subgroup of the HAI Allied Task Force with implementation expertise that, through a series of additional teleconferences and communications, performed extensive editing and reformatting to create implementation-focused text.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Recommendation*

A. Good evidence to support a recommendation for use
B. Moderate evidence to support a recommendation for use
C. Poor evidence to support a recommendation

*Adapted from the Canadian Task Force on the Periodic Health Examination.

COST ANALYSIS

Guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Review and Approval Process

A critical stage in the development process is peer review. Peer reviewers are relied on for expert, critical, and unbiased scientific appraisals of the documents. The Society for Healthcare Epidemiology of America/Infectious Diseases Society of America (SHEA/IDSA) employed a process used for all SHEA/IDSA guidelines that includes a multilevel review and approval. Comments were obtained from several outside reviewers who complied with the SHEA/IDSA policy on conflict of interest disclosure. In addition, 8 stakeholder organizations provided comments on the document. Finally, the guideline was reviewed and approved by the IDSA Standards and Practice Guidelines Committee and the Board of Directors of the SHEA and the IDSA prior to dissemination.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Recommendations for Implementing Prevention and Monitoring Strategies

Recommendations for preventing and monitoring surgical site infection (SSI) are summarized below. They are designed to assist acute care hospitals in prioritizing and implementing their SSI prevention efforts.

Each recommendation includes a ranking for the strength and the quality of evidence supporting it. Definitions of the levels of evidence (I-III) and grades of recommendation (A-E) are repeated at the end of the "Major Recommendations" field.

Definition

SSIs are classified as follows (see also Figure in original guideline document):

- Superficial Incisional (involving only skin or subcutaneous tissue of the incision)
- Deep Incisional (involving fascia and/or muscular layers)
- Organ/space

Basic Practices for Prevention and Monitoring of SSI: Recommended for All Acute Care Hospitals

Surveillance of SSI

1. Perform surveillance for SSI (**A-II**).
    - Identify high-risk, high-volume operative procedures to be targeted for SSI surveillance on the basis of a risk assessment of patient populations, operative procedures performed, and available SSI surveillance data.
    - Identify, collect, store, and analyze data needed for the surveillance program (Mangram et al., 1999).
        - Implement a system for collecting data needed to identify SSIs.
        - Develop a database for storing, managing, and accessing collected data on SSIs.
        - Prepare periodic SSI reports (the time frame will depend on hospital needs and volume of targeted procedures).
        - Collect denominator data on all patients undergoing targeted procedures, to calculate SSI rates for each type of procedure (van Kasteren et al., 2005).
        - Identify trends (e.g., in rates of SSI and pathogens causing SSIs).
    - Use Centers for Disease Control and Prevention National Healthcare Safety Network definitions of SSI (Horan et al., 1992).
    - Perform indirect surveillance for targeted procedures (Baker et al., 1995; Cardo, Falk, & Mayhall, 1993; Lee, 1992; Haley et al., 1985).
    - Perform postoperative surveillance for 30 days; extend the postoperative surveillance period to 12 months if prosthetic material is implanted during surgery (Horan et al., 1992).
    - Surveillance should be performed for patients readmitted to the hospital.
        - If an SSI is diagnosed at your institution but the surgical procedure was performed elsewhere, notify the hospital where the original procedure was performed.
    - Develop a system for routine review and interpretation of SSI rates to detect significant increases or outbreaks and to identify areas where additional resources might be needed to improve SSI rates (Lee, 1992).

2. Provide ongoing feedback on SSI surveillance and process measures to surgical and perioperative personnel and leadership (**A-II**).
    - Routinely provide feedback on SSI rates and process measures to individual surgeons and hospital leadership (Mangram et al., 1999).
        - For each type of procedure performed, provide risk-adjusted rates of SSI.
        - Anonymously benchmark procedure-specific risk-adjusted rates of SSI among peer surgeons (Mangram et al., 1999).
    - Confidentially provide data to individual surgeons, the surgical division, and/or department chiefs.

3. Increase the efficiency of surveillance through the use of automated data (**A-II**).

- Implement a method to electronically transfer operative data, including process measures when available, to infection prevention and control personnel to facilitate acquisition of denominator data and calculation of SSI rates for various procedures.
- If information technology and infrastructure resources are available, develop automated methods for detection of SSI by use of automated data on readmissions, microbiological test results, and antimicrobial dispensing (Yokoe et al., 2004).
    - Implementation of automated surveillance may improve the sensitivity of surveillance.

Practice

1. Administer antimicrobial prophylaxis in accordance with evidence-based standards and guidelines (**A-I**) (Mangram et al., 1999; American Society of Health-System Pharmacists, 1999; "Antimicrobial prophylaxis in surgery," 2001).
    - Administer prophylaxis within 1 hour before incision to maximize tissue concentration (Bratzler & Houck, 2004; Bratzler & Hunt, 2006).
        - Two hours are allowed for the administration of vancomycin and fluoroquinolones.
    - Select appropriate agents on the basis of the surgical procedure, the most common pathogens causing SSI for a specific procedure, and published recommendations (Bratzler & Houck, 2004; Bratzler & Hunt, 2006).
    - Discontinue prophylaxis within 24 hours after surgery for most procedures; discontinue within 48 hours for cardiac procedures (Bratzler & Houck, 2004; Bratzler & Hunt, 2006).

2. Do not remove hair at the operative site unless the presence of hair will interfere with the operation; do not use razors (**A-II**) (Mangram et al., 1999).
    - If hair removal is necessary, remove it by clipping or by use of a depilatory agent.

3. Control blood glucose level during the immediate postoperative period for patients undergoing cardiac surgery (**A-I**) (Bratzler & Hunt, 2006).
    - Maintain the postoperative blood glucose level at less than 200 mg/dL.
        - Measure blood glucose level at 6:00 am on postoperative day 1 and postoperative day 2, with the procedure day being postoperative day 0.
    - Initiating close blood glucose control in the intraoperative period has not been shown to reduce the risk of SSI, compared with starting blood glucose control in the postoperative period. In fact, a recently performed randomized controlled trial showed that initiating close glucose control during cardiac surgery may actually lead to higher rates of adverse outcomes, including stroke and death (Gandhi et al., 2007).

4. Measure and provide feedback to providers on the rates of compliance with process measures, including antimicrobial prophylaxis, proper hair removal, and glucose control (for cardiac surgery) (**A-III**) (Mangram et al., 1999).

- Routinely provide feedback to surgical staff and leadership, regarding compliance with targeted process measures.

5. Implement policies and practices aimed at reducing the risk of SSI that meet regulatory and accreditation requirements and that are aligned with evidence-based standards (e.g., Centers for Disease Control and Prevention and professional organization guidelines) (**A-II**) (Mangram et al., 1999; Bratzler & Hunt, 2006; Dellinger et al., 2005).
    - Policies and practices should include but are not limited to the following:
        - Reducing modifiable patient risk factors
        - Optimal cleaning and disinfection of equipment and the environment
        - Optimal preparation and disinfection of the operative site and the hands of the surgical team members
        - Adherence to hand hygiene
        - Traffic control in operating rooms
        - See Table 1 in the original guideline document for a more detailed list.

Education

1. Educate surgeons and perioperative personnel about SSI prevention (**A-III**).
    - Include risk factors, outcomes associated with SSI, local epidemiology (e.g., SSI rates by procedure and the rate of methicillin-resistant *Staphylococcus aureus* [MRSA] infection in a facility), and basic prevention measures.

2. Educate patients and their families about SSI prevention, as appropriate (**A-III**).
    - Provide instructions and information to patients before surgery, describing strategies for reducing SSI risk. Specifically provide preprinted materials to patients.
    - Examples of printed materials for patients are available from the following Web pages:
        - JAMA patient page: wound infections (from the *Journal of the American Medical Association*; available at: http://jama.ama-assn.org/cgi/reprint/294/16/2122.pdf)
        - Surgical Care Improvement Project consumer info sheet (available at: http://www.ofmq.com/Websites/ofmq/Images/FINALconsumer_tips2.pdf)
        - What you need to know about infections after surgery: a fact sheet for patients and their family members (available at: http://www.ihi.org/IHI/Topics/PatientSafety/SurgicalSiteInfections/)

Accountability

1. The hospital's chief executive officer and senior management are responsible for ensuring that the healthcare system supports an infection prevention and

control program that effectively prevents the occurrence of SSIs and the transmission of epidemiologically significant pathogens.
2. Senior management is accountable for ensuring that an adequate number of trained personnel are assigned to the infection prevention and control program.
3. Senior management is accountable for ensuring that healthcare personnel, including licensed and nonlicensed personnel, are competent to perform their job responsibilities.
4. Direct healthcare providers (such as physicians, nurses, aides, and therapists) and ancillary personnel (such as housekeeping and equipment-processing personnel) are responsible for ensuring that appropriate infection prevention and control practices are used at all times (including hand hygiene; strict adherence to aseptic technique; cleaning and disinfection of equipment and the environment; cleaning, disinfection, and sterilization of medical supplies and instruments; and appropriate surgical prophylaxis protocols).
5. Hospital and unit leaders are responsible for holding personnel accountable for their actions.
6. The person that manages the infection prevention and control program is responsible for ensuring that an active program to identify SSIs is implemented, that data on SSIs are analyzed and regularly provided to those who can use the information to improve the quality of care (e.g., unit staff, clinicians, and hospital administrators), and that evidence-based practices are incorporated into the program.
7. Personnel responsible for healthcare personnel and patient education are accountable for ensuring that appropriate training and educational programs to prevent SSIs are developed and provided to personnel, patients, and families.
8. Personnel from the infection prevention and control program, the laboratory, and information technology departments are responsible for ensuring that systems are in place to support the surveillance program.

Special Approaches for the Prevention of SSI

Perform an SSI risk assessment. These special approaches are recommended for use in locations and/or populations within the hospital that have unacceptably high SSI rates despite implementation of the basic SSI prevention strategies listed above.

1. Perform expanded SSI surveillance to determine the source and extent of the problem and to identify possible targets for intervention (**B-II**).
    - Expand surveillance to include additional procedures and possibly to all National Healthcare Safety Network procedures (Mangram et al., 1999). Align expanded surveillance with the hospital's strategic plan.

Approaches That Should Not Be Considered a Routine Part of SSI Prevention

1. Do not routinely use vancomycin for antimicrobial prophylaxis (**B-II**).
    - Vancomycin should not routinely be used for antimicrobial prophylaxis, but it can be an appropriate agent for specific scenarios. Reserve vancomycin for specific clinical circumstances, such as a proven outbreak of SSI due to MRSA, high endemic rates of SSI due to MRSA,

targeted high-risk patients who are at increased risk for SSI due to MRSA (including cardiothoracic surgical patients and elderly patients with diabetes), and high-risk surgical procedures during which an implant is placed (Dodds et al., 2004).
    - No definitions for "high endemic rates of SSI due to MRSA" have been established.
    - Studies of the efficacy of vancomycin prophylaxis were published before the emergence of community-acquired MRSA.
- A recent meta-analysis of 7 studies comparing glycopeptide prophylaxis with beta-lactam prophylaxis before cardiothoracic surgery showed that there was no difference in rates of SSI between the 2 antimicrobial prophylaxis regimens (Bolon et al., 2004).
- No study has prospectively analyzed the effect of providing both glycopeptide and beta-lactam antimicrobials for preoperative antimicrobial prophylaxis. Thus, it is unclear whether treatment with vancomycin, when indicated, should be added to or used in place of standard recommended antimicrobial prophylaxis. Because vancomycin does not have activity against gram-negative pathogens, some experts recommend *adding* vancomycin treatment to standard antimicrobial prophylaxis for the specific clinical circumstances described above.

2. Do not routinely delay surgery to provide parenteral nutrition (**A-I**).
    - Preoperative administration of total parenteral nutrition has not been shown to reduce the risk of SSI in prospective, randomized controlled trials and may increase the risk of SSI (Brennan et al., 1994; "Perioperative total parenteral nutrition in surgical patients," 1991).

Unresolved Issues

1. Preoperative bathing with chlorhexidine-containing products
    - Preoperative showering with agents such as chlorhexidine has been shown to reduce bacterial colonization of the skin (Kaul & Jewett, 1981). Several studies have examined the utility of preoperative showers, but none has definitively proven that they decrease SSI risk. A recent Cochrane review (Webster & Osborne, 2007) evaluated the evidence for preoperative bathing or showering with antiseptics for SSI prevention. Six randomized, controlled trials evaluating the use of 4% chlorhexidine gluconate were included in the analysis, with no clear evidence of benefit noted. To gain the maximum antiseptic effect of chlorhexidine, it must be allowed to dry completely and not be washed off.

2. Routine screening for MRSA or routine attempts to decolonize surgical patients with an antistaphylococcal agent in the preoperative setting
    - A recent double-blinded, randomized, controlled trial involving more than 4,000 patients showed that intranasal application of mupirocin did not significantly reduce the *S. aureus* SSI rate (Perl et al., 2002). In a secondary analysis of these data, however, the use of intranasal mupirocin was associated with an overall decreased rate of nosocomial *S. aureus* infection among the *S. aureus* carriers (Perl et al., 2002). Mupirocin resistance has been documented (Miller et al., 1996).

- In contrast, other studies have suggested that mupirocin may be effective for particular patient groups, including patients undergoing orthopedic (Kallen, Wilson, & Larson, 2005; Wilcox et al., 2003) or cardiothoracic (Nicholson & Huesman, 2006; McKibben et al., 2005) surgery. However, these were not randomized controlled trials.

3. Maintaining oxygenation with supplemental oxygen during and after colorectal procedures
    - Three randomized clinical trials have been published comparing 80% fraction of inspired oxygen (FiO_2) with 30% to 35% FiO_2 during the intra- and postoperative periods.
        - Two trials showed a significant decrease in the rate of SSI associated with the higher FiO_2 value (Belda et al., 2005; Greif et al., 2000), and one actually showed a significant increase in the rate of SSI (Pryor et al., 2004).
        - Both studies with results showing a beneficial effect of supplemental oxygen included patients who underwent colorectal surgery, whereas the study with results showing a negative effect of supplemental oxygen included all types of patients.
        - When results of the 3 studies are pooled, the rate of SSI decreases from 15.2% among patients who received 30% to 35% supplemental FiO_2 to 11.5% among patients who received 80% FiO_2 during surgery (3.7% absolute risk reduction; P = .10) (Dellinger, 2005).

4. Maintaining normothermia (temperature higher than 36.0 degrees Celsius) immediately after colorectal surgery
    - One randomized trial with 200 patients undergoing colorectal surgery found that infection rates were significantly reduced among patients randomized to have normothermia maintained during surgery (Kurz, Sessler, & Lenhardt, 1996).
    - Controversy still exists regarding this recommendation, because of the following:
        - The trial examined the effect of *intraoperative* normothermia, not postoperative normothermia, and did not include risk adjustment for type of procedure.
        - An observational study showed no impact of normothermia on infection rates (Barone et al., 1999).

5. Preoperative intranasal and pharyngeal chlorhexidine treatment for patients undergoing cardiothoracic procedures (Segers et al., 2006)
    - Although data exist from a randomized, controlled trial to support its usage, chlorhexidine nasal cream is neither approved by the US Food and Drug Administration nor commercially available in the United States.

Definitions:

Quality of Evidence*

I. Evidence from ≥1 properly randomized, controlled trial

II. Evidence from ≥1 well-designed clinical trial without randomization, from cohort or case-controlled analytic studies (preferably from >1 center), from multiple time-series studies, or from dramatic results of uncontrolled experiments
III. Evidence from opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees

Strength of Recommendation*

A. Good evidence to support a recommendation for use
B. Moderate evidence to support a recommendation for use
C. Poor evidence to support a recommendation

*Adapted from the Canadian Task Force on the Periodic Health Examination.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

The recommendations in this guideline are largely based on previously published healthcare-associated infection (HAI) prevention guidelines available from a number of organizations, including the Healthcare Infection Control Practices Advisory Committee and the Centers for Disease Control and Prevention, Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Association for Professionals in Infection Control and Epidemiology, and relevant literature published after these guidelines.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate strategies to prevent surgical site infection (SSI) in acute care hospitals

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Recommendations that might ordinarily be included in a guideline with a C-level strength of recommendation were excluded from the recommendations and are discussed in the "unresolved issues" sections (see original guideline document); this was done to help hospitals to focus their implementation efforts on the most strongly recommended prevention practices. Hospitals can prioritize their efforts by initially focusing on implementation of the prevention approaches listed as basic practices recommended for all acute care hospitals. If healthcare-associated infection (HAI) surveillance or other risk assessments suggest that there is ongoing transmission despite implementation of basic practices, hospitals should then consider adopting some or all of the prevention approaches listed under the "special approaches" section of this document. These can be implemented within specific locations or patient populations or can be implemented hospital wide, depending on outcome data, risk assessment, and/ or local requirements. Most of the special approaches listed in this document are supported by studies based on the control of HAI outbreaks and require additional personnel and financial resources for implementation.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Audit Criteria/Indicators
Foreign Language Translations
Patient Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Anderson DJ, Kaye KS, Classen D, Arias KM, Podgorny K, Burstin H, Calfee DP, Coffin SE, Dubberke ER, Fraser V, Gerding DN, Griffin FA, Gross P, Klompas M, Lo E, Marschall J, Mermel LA, Nicolle L, Pegues DA, Perl TM, Saint S, Salgado CD, Weinstein RA, Wise R, Yokoe DS. Strategies to prevent surgical site infections in acute care hospitals. Infect Control Hosp Epidemiol 2008 Oct;29 Suppl 1:S51-61. PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2008 Oct

GUIDELINE DEVELOPER(S)

Infectious Diseases Society of America - Medical Specialty Society
Society for Healthcare Epidemiology of America - Professional Association

SOURCE(S) OF FUNDING

Society for Healthcare Epidemiology of America (SHEA)/Infectious Diseases Society of America (IDSA)

GUIDELINE COMMITTEE

Healthcare-Associated Infections Task Force

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Deverick J. Anderson, MD, MPH; Keith S. Kaye, MD; David Classen, MD, MS; Kathleen M. Arias, MS, CIC; Kelly Podgorny, RN, MS, CPHQ; Helen Burstin, MD; David P. Calfee, MD, MS; Susan E. Coffin, MD, MPH; Erik R. Dubberke, MD; Victoria Fraser, MD; Dale N. Gerding, MD; Frances A. Griffin, RRT, MPA; Peter Gross, MD; Michael Klompas, MD; Evelyn Lo, MD; Jonas Marschall, MD; Leonard A. Mermel, DO, ScM; Lindsay Nicolle, MD; David A. Pegues, MD; Trish M. Perl, MD; Sanjay Saint, MD; Cassandra D. Salgado, MD, MS; Robert A. Weinstein, MD; Robert Wise, MD; Deborah S. Yokoe, MD, MPH

Task Force Members: David Classen, MD, MS; Infectious Diseases Society of America Co-Chair (University of Utah, Salt Lake City, UT); Deborah S. Yokoe, MD, MPH; Society for Healthcare Epidemiology of America Co-Chair (Brigham & Women's Hospital and Harvard Medical School, Boston, MA); Deverick J. Anderson, MD, MPH; Section Leader, Surgical Site Infection (Duke University Medical Center, Durham, NC); Kathleen M. Arias, MS, CIC; Association for

Professionals in Infection Control and Epidemiology liaison, Implementation Subgroup (Association for Professionals in Infection Control and Epidemiology, Washington, DC); Helen Burstin, MD; National Quality Forum liaison (National Quality Forum, Washington, DC); David P. Calfee, MD, MS; Section Leader, Methicillin-Resistant S. aureus (Mount Sinai School of Medicine, New York, NY); Susan E. Coffin, MD, MPH; Section Leader, Ventilator- Associated Pneumonia (Children's Hospital of Philadelphia and University of Pennsylvania School of Medicine, Philadelphia, PA); Erik R. Dubberke, MD; Section Leader, C. difficile–Associated Disease (Washington University School of Medicine, St. Louis, MO); Victoria Fraser, MD; Society for Healthcare Epidemiology of America President (Washington University School of Medicine, St. Louis, MO); Dale N. Gerding, MD; Section Leader, C. difficile–Associated Disease (Hines Veterans Affairs Medical Center, Hines, IL, and Loyola University Chicago Stritch School of Medicine, Chicago, IL); Frances A. Griffin, RRT, MPA; Institute for Healthcare Improvement liaison (The Institute for Healthcare Improvement, Cambridge, MA); Peter Gross, MD (Hackensack University Medical Center, Hackensack, NJ and the University of Medicine and Dentistry of New Jersey–New Jersey Medical School, Newark, NJ); Keith S. Kaye, MD; Section Leader, Surgical Site Infection (Duke University Medical Center, Durham, NC); Michael Klompas, MD; Section Leader, Ventilator-Associated Pneumonia (Brigham & Women's Hospital and Harvard Medical School, Boston, MA); Evelyn Lo, MD; Section Leader, Catheter-Associated Uri nary Tract Infection (University of Manitoba and St. Boniface General Hospital, Winnipeg, Manitoba, Canada); Jonas Marschall, MD; Section Leader, Catheter-Associated Bloodstream Infection (Washington University School of Medicine, St. Louis, MO); Leonard A. Mermel, DO, ScM; Section Leader, Catheter- Associated Bloodstream Infection (Warren Alpert Medical School of Brown University and Rhode Island Hospital, Providence, RI); Lindsay Nicolle, MD; Section Leader, Catheter-Associated Urinary Tract Infection (University of Manitoba and Health Sciences Center, Winnipeg, Manitoba, Canada); David A. Pegues, MD; Healthcare Infection Control Practices Advisory Committee liaison (David Geffen School of Medicine at the University of California Los Angeles, Los Angeles, CA); Trish M. Perl, MD (Johns Hopkins Medical Institutions and University, Baltimore, MD); Kelly Podgorny, RN, MS, CPHQ; The Joint Commission liaison, Implementation Subgroup (The Joint Commission, Oakbrook Terrace, IL); Sanjay Saint, MD (Ann Arbor Veterans Affairs Medical Center and University of Michigan Medical School, Ann Arbor, MI); Cassandra D. Salgado, MD, MS; Section Leader, Methicillin-Resistant S. aureus (Medical University of South Carolina, Charleston, SC); Robert A. Weinstein, MD (Stroger [Cook County] Hospital and Rush University Medical Center, Chicago, IL); Robert Wise, MD; The Joint Commission liaison (The Joint Commission, Oakbrook Terrace, IL)

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All members of the Healthcare-Associated Infections (HAI) Allied Task Force and the external peer reviewers complied with the Infectious Diseases Society of America (IDSA) policy on conflicts of interest, which requires disclosure of any financial or other interest within the past 2 years that might be construed as constituting an actual, potential, or apparent conflict. Members of the HAI Allied Task Force and the external reviewers were provided with the IDSA conflicts of interest disclosure statement and were asked to identify ties to companies developing products that might be affected by promulgation of the compendium. Information was requested regarding employment, consultancies, stock

ownership, honoraria, research funding, expert testimony, and membership on company advisory committees. The task force made decisions on a case-by-case basis as to whether an individual's role should be limited as a result of a conflict.

D.S.Y. has received a research grant from Sage Products. L.A.M. has received research grants from and served as a consultant to 3M, Angiotech, and Cadence and is a consultant to Ash Access Technology. D.J.A. has received a research grant from Pfizer and has served on advisory councils for Schering-Plough and Pfizer. K.M.A. is the immediate past president of the Association for Professionals in Infection Control and Epidemiology and serves on its board of directors. H.B.'s participation does not represent official endorsement of the compendium by the National Quality Forum. D.P.C. is a member of the speakers' bureau for Enturia. S.E.C. has received a research grant from Merck. E.R.D. is a member of the speakers' bureaus for Elan, Enzon, Schering-Plough, Viropharma, Pfizer, and Astellas and serves on the advisory boards of Schering-Plough, Genzyme, and Salix. V.F. is the past president of the Society for Healthcare Epidemiology of America, has been a consultant to Steris, Verimetrix, and Merck, and is a member of the speakers' bureaus for Cubist and Merck. P.G. has received a research grant from Becton, Dickinson and Company (BD); has been on the speakers' bureau for Ortho-McNeil; and served on the Zostervax advisory board of Merck. K.S.K has received research grants from Pfizer, Merck, and Cubist; is a member of the speakers' bureaus for Pfizer, Merck, Cubist, Schering-Plough, and Wyeth; and serves on the advisory board for Schering- Plough. J.M. has received a research grant from the Swiss National Science Foundation. T.M.P. is a past president of the Society for Healthcare Epidemiology of America; is on the advisory board or the speakers' bureau for Theradoc, 3M, Replydine, and Ortho-McNeil; and has received honoraria from VHA and the Institute for Healthcare Improvement. S.S. has received an honorarium from VHA. C.D.S. is a member of the speakers' bureau for Pfizer. R.A.W. has received research grants from Sage Products and the Centers for Disease Control and Prevention and has been a consultant on Tolevamer for Genzyme and a consultant to the Centers for Disease Control and Prevention. D.C. is co-chair of the National Quality Forum Patient Safety Taxonomy Committee and an employee of CSC, a healthcare technology consulting company, and has ownership in Theradoc, a medical software company. All other authors report no relevant conflicts of interest.

ENDORSER(S)

American Organization of Nurse Executives - Professional Association
Association for Respiratory Care - Professional Association
Infusion Nurses Society - Professional Association
Pediatric Infectious Diseases Society - Professional Association
Society for Hospital Medicine - Professional Association
Society of Critical Care Medicine - Professional Association
Surgical Infection Society - Professional Association

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Society for Healthcare Epidemiology of America (SHEA) Web site.

Print copies: Available from the Reprints Coordinator, University of Chicago Press, 1427 E. 60th St., Chicago, IL 60637 (reprints@press.uchicago.edu) or contact the journal office (iche@press.uchicago.edu).

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Improving patient safety through infection control: a new healthcare imperative. Infect Control Hosp Epidemiol 2008;29:S3–S11. Electronic copies: Available from the Society for Healthcare Epidemiology of America (SHEA) Web site.
- A compendium of strategies to prevent healthcare-associated infections in acute care hospitals. Executive summary. Infect Control Hosp Epidemiol 2008;29:S12–S21. Electronic copies: Available from the Society for Healthcare Epidemiology of America (SHEA) Web site.

Print copies: Available from the Reprints Coordinator, University of Chicago Press, 1427 E. 60th St., Chicago, IL 60637 (reprints@press.uchicago.edu) or contact the journal office (iche@press.uchicago.edu).

Performance measures and a urinary catheter reminder form (in appendix) are available in the original guideline document.

PATIENT RESOURCES

The following is available:

- FAQs (frequently asked questions) about surgical site infections. 2008. 1 p.

Electronic copies: Available in English and Spanish from the Society for Healthcare Epidemiology of America (SHEA) Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This NGC summary was completed by ECRI Institute on January 23, 2009. The information was verified by the guideline developer on March 30, 2009.

COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions.

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx .

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

Copyright/Permission Requests

Date Modified: 5/18/2009